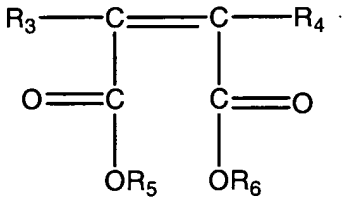
Amendments to the Claims:

1. (Currently Amended) A method of forming a combination fertilizer product and polymer comprising the step of: combining a substantially water soluble dicarboxylic polymer and a fertilizer product, said polymer being at least partially ethylenically unsaturated and being in intimate contact with said fertilizer product.

2. (Original) The method of claim 1, said polymer being formed by the steps of:

providing a reaction mixture comprising at least two different reactants selected from the group consisting of first and second or a mixture of said second reactants, wherein said first reactant is a dicarboxylic reactant of the general formula



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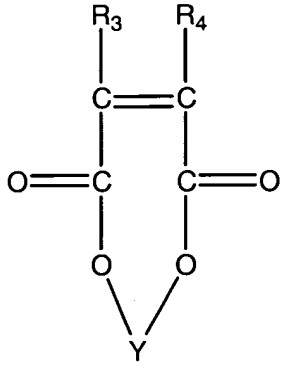

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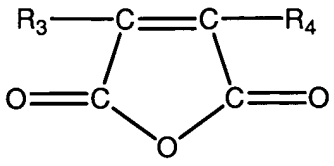
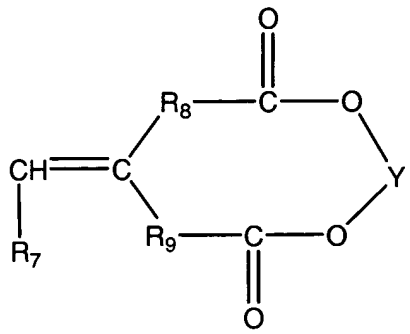


and said second reactant is a dicarboxylic reactant of the general formula



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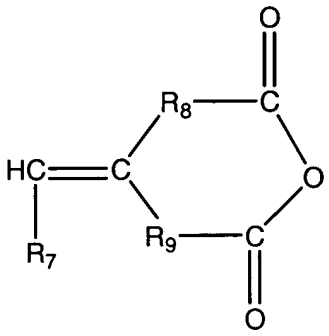

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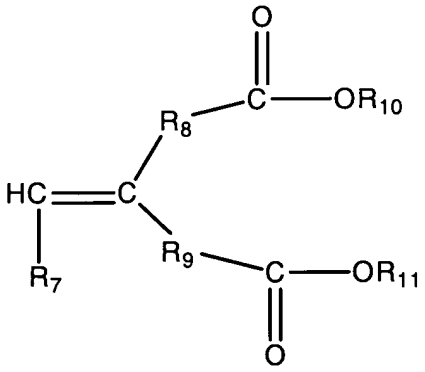


wherein each R_7 is individually and respectively selected from the group consisting of H, OH, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl based ester groups, R'CO_2 groups, OR' groups and COOX groups, wherein R' is selected from the group consisting of C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups and X is selected from the

group consisting of H, the alkali metals, NH_4 and the C_1-C_4 alkyl ammonium groups, R_3 and R_4 are individually and respectively selected from the group consisting of H, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups, R_5, R_6, R_{10} and R_{11} are individually and respectively selected from the group consisting of H, the alkali metals, NH_4 and the C_1-C_4 alkyl ammonium groups, Y is selected from the group consisting of Fe, Mn, Mg, Zn, Cu, Ni, Co, Mo, V and Ca, and R_8 and R_9 are individually and respectively selected from the group consisting of nothing (i.e., the groups are non-existent), CH_2, C_2H_4, and C_3H_6, each of said moieties having or being modified to have a total of two COO groups therein; and

polymerizing said reaction mixture to form a polymer having polymeric subunits therein with carboxyl-containing groups.

3. (Original) The method of claim 2, said first reactant being maleic anhydride and said second reactant being itaconic acid.

4. (Original) The method of claim 2, said polymerization step being carried out by generating free radicals in said reaction mixture.

5. (Original) The method of claim 4, said free radical generation step comprising the step of adding a peroxide to said reaction mixture.

6. (Original) The method of claim 4, said free radical generation step comprising the step of subjecting said reaction mixture to UV light.

7. (Original) The method of claim 4, said free radical generation step comprising the step of adding a persulfate to said reaction mixture.

8. (Original) The method of claim 2, said reaction mixture being formed in a solvent selected from the group consisting of water and acetone.

9. (Currently Amended) The method of claim 2, said polymerization step being carried out at a temperature of from about 0~~EC~~ °C (degrees Celsius) to about 120~~EC~~ °C(degrees Celsius) for a period of from about 0.25 hours to about 24. hours.

10. (Original) The method of claim 2, said polymerization step being carried out under an inert gas atmosphere.

11. (Original) The method of claim 2, including the step of drying said polymer to a solid form.

12. (Original) The method of claim 2, including the step of reacting said polymer with an ion to form a complex with the polymer.

13. (Original) The method of claim 12, said ion being selected from the group consisting of Fe, Zn, Cu, Mn, Mg, Co, Ni, Al, V or Ca ion.

14. (Original) The method of claim 2, said combining step occurring by a method selected from the group consisting of applying said polymer to the surface of a fertilizer particle, co-grinding said fertilizer with said polymer, co-dispersing said polymer and said fertilizer in an aqueous medium, thoroughly mixing said polymer with said fertilizer, and mixtures thereof.

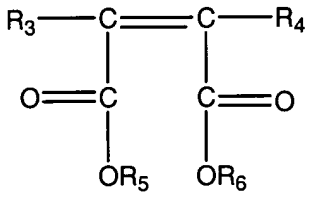
15. (Original) The method of claim 1, said polymer substantially coating said fertilizer product.

16. (Original) The method of claim 2, including the step of reacting at least one of said reactants with an ion to form a complex.

17. (Original) The method of claim 16, said ion being selected from the group consisting of Fe, Zn, Cu, Mn, Mg, Co, Ni, Al, V or Ca ion.

18. (Original) The method of claim 1, said fertilizer product being selected from the group consisting of phosphate-based fertilizers, organic wastes, waste waters, fertilizers containing nitrogen, phosphorous, potassium calcium, magnesium, sulfur, boron, or molybdenum materials, fertilizers containing micronutrients, and oxides, sulfates, chlorides, and chelates of such micronutrients.

19. (Currently Amended)A method of forming a combination fertilizer product and polymer comprising the step of: combining a substantially water soluble dicarboxylic polymer and a fertilizer product, said polymer being in intimate contact with said fertilizer, and at least partially ethylenically unsaturated and being formed by the steps of: providing a reaction mixture comprising at least two different reactants selected from the group consisting of first and second or a mixture of said second reactants, wherein said first reactant is a dicarboxylic reactant of the general formula



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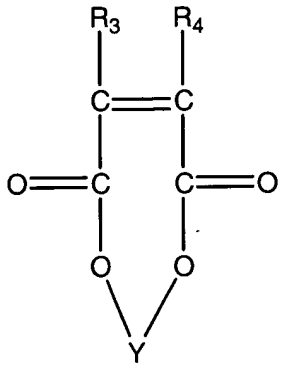

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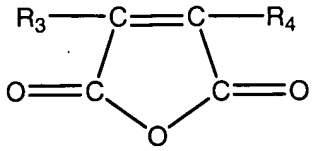
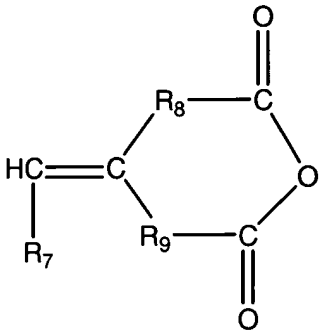
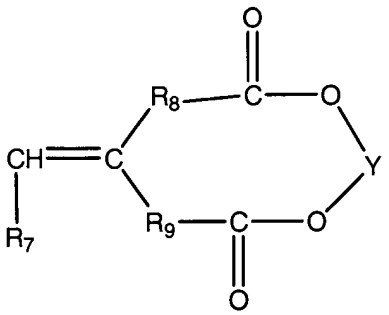




and said second reactant is a dicarboxylic reactant of the general formula



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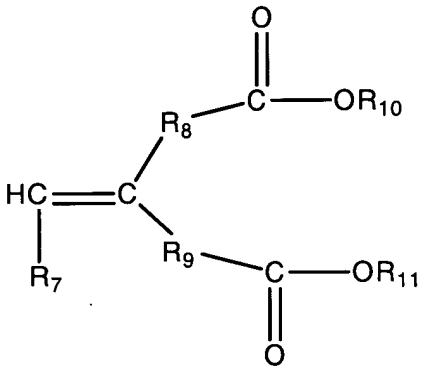

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wherein each R_7 is individually and respectively selected from the group consisting of H, OH, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl based ester groups, R'CO_2 groups, OR' groups

and COOX groups, wherein R' is selected from the group consisting of C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups and X is selected from the group consisting of H, the alkali metals, NH_4 and the C_1-C_4 alkyl ammonium groups, R_3 and R_4 are individually and respectively selected from the group consisting of H, C_1-C_{30} straight, branched chain and cyclic alkyl or aryl groups, R_5, R_6, R_{10} and R_{11} are individually and respectively selected from the group consisting of H, the alkali metals, NH_4 and the C_1-C_4 alkyl ammonium groups, Y is selected from the group consisting of Fe, Mn, Mg, Zn, Cu, Ni, Co, Mo, V and Ca, and R_8 and R_9 are individually and respectively selected from the group consisting of nothing (i.e., the groups are non-existent), CH_2, C_2H_4, and C_3H_6, each of said moieties having or being modified to have a total of two COO groups therein; and

polymerizing said reaction mixture to form a polymer having polymeric subunits therein with carbonyl-containing groups.

20. (Original) The method of claim 19, said first reactant being maleic anhydride and said second reactant being itaconic acid.

21. (Original) The method of claim 19, said polymerization step being carried out by generating free radicals in said reaction mixture.

22. (Original) The method of claim 21, said free radical generation step comprising the step of adding a peroxide to said reaction mixture.

23. (Original) The method of claim 21, said free radical generation step comprising the step of subjecting said reaction mixture to UV light.

24. (Original) The method of claim 21, said free radical generation step comprising the step of adding a persulfate to said reaction mixture.

25. (Original) The method of claim 19, said reaction mixture being formed in a solvent selected from the group consisting of water and acetone.

26. (Currently Amended) The method of claim 19, said polymerization step being carried out at a temperature of from about 0~~EC~~ °C (degrees Celsius) to about 120~~EC~~ °C (degrees Celsius) for a period of from about 0.25 hours to about 24. hours.

27. (Original) The method of claim 19, said polymerization step being carried out under an inert gas atmosphere.

28. (Original) The method of claim 19, including the step of drying said polymer to a solid form.

29. (Original) The method of claim 19, including the step of reacting said polymer with an ion to form a complex with the polymer.

30. (Original) The method of claim 29, said ion being selected from the group consisting of Fe, Zn, Cu, Mn, Mg, Co, Ni, Al, V or Ca ion.

31. (Original) The method of claim 19, said combining step occurring by a method selected from the group consisting of applying said polymer to the surface of a fertilizer particle, co-grinding said fertilizer with said polymer, co-dispersing said polymer and said fertilizer in an aqueous medium, thoroughly mixing said polymer with said fertilizer, and mixtures thereof.

32. (Original) The method of claim 19, said polymer substantially coating said fertilizer product.

33. (Original) The method of claim 19, including the step of reacting at least one of said reactants with an ion to form a complex.

34. (Original) The method of claim 33, said ion being selected from the group consisting of Fe, Zn, Cu, Mn, Mg, Co, Ni, Al, V or Ca ion.